



Lumen™ is a liquid enzyme additive developed for use with liquid fertilisers or as a stand-alone product. Lumen enhances the uptake of water and broad nutrient acquisition by plant roots with resultant improvements in soil and plant health, growth and yield.

Lumen contains a blend of two enzymes in a concentrated liquid formulation that once soil applied triggers literally trillions of constant catalyst reactions. The enzyme lipase converts lipids present in the soil organic matter releasing bio-available nutrients and water for the plant while stimulating native microbial soil activity. The mannanase enzyme converts exudates around the outer layers of the root tip creating soil conditions ideal for plant root growth.

Lumen is suitable for use on all broadacre and row crops, both dryland and irrigated, where liquid soil fertiliser application practices are utilized. Lumen is well suited for use at planting and side-dressing, to enhance growth through critical growth and nutrient demand periods. Multiple applications can be used.

In summary, Lumen provides the right amount of enzyme right where you need it and when you need it most, enhancing the utilisation of applied fertilisers while continually working and releasing nutrients from soil organic matter and residues.

## THE ADDITIONAL POWER OF 2 ENZYMES IN LUMEN

Lipase	Mannanase	Product offer
<ul style="list-style-type: none"> <li>• Converts lipids within organic matter into soil available nutrients for plant root uptake</li> <li>• Increases natural soil microbial based activity</li> <li>• Improves soil health</li> </ul>	<ul style="list-style-type: none"> <li>• Breaks down exudates around outer layer of root tips</li> <li>• Creates soil conditions ideal for plant root growth</li> <li>• Allows the plant to uptake more water and plant available nutrients (that the lipase enzymes aided in providing)</li> </ul>	<ul style="list-style-type: none"> <li>• Stand alone enzyme additive for mixing in solution with soluble fertilisers</li> <li>• Dilute concentrate commercial formulation packed ready for use</li> </ul>

## Directions for use

- Lumen is for soil application.
- Lumen is designed for use on all soil types.
- Lumen can be applied to dry soil if planting dry and will be available when the seed germinates.

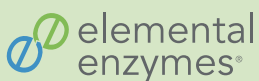
Situation	Use Pattern	Rate	Critical Comments
Banded or in-furrow application on broad acre crops	In-furrow at planting, banding preplant, or delivery near planting bed for all broadacre or row crops	8–16mL/ha	Apply as a total in-furrow spray volume of 30L–140L/ha using fertiliser and/or water carrier
	Fertiliser coating	16–24mL/ha	Spray product evenly onto granulated fertiliser and mix in an auger or other mechanical mixer
	For side-dressing when applied within 15cm of the plants	16mL/ha	When side-dressing apply with liquid fertiliser solution in spray volume of 30L–140L/ha

## Compatibility:

Check chemical mixture compatibility using a jar test using all products in proper proportion to establish physical compatibility prior to application. This product is non-phytotoxic and compatible with many commonly used in-furrow treatments including fertilisers, insecticides, pesticides, fungicides, micronutrients and bio-stimulants.

Can be mixed with most NPK fertilisers with a pH between 4.5 and 9.0 as well as water carrier solution. Half fill mix tank with water and begin agitation. Add products in this order, mixing thoroughly after each addition: pesticides, fertilisers, adjuvants then Lumen. Fill tank with remainder of water and continue agitation until solution is completely mixed.

The information provided in this Info Sheet is an extract and does not constitute the full Directions for Use. PLEASE READ THE PRODUCT LABEL THOROUGHLY BEFORE USE.



Elemental Enzymes®, founded in 2011 and based in St Louis, USA is a life sciences company that creates novel enzyme, peptide and natural solutions that improve soil health, plant health, performance and yield. Our technology and product solutions are applied through seed treatment, foliar applications, tree injection, in-furrow soil treatments, fertiliser coating and fertigation.

### Elemental soil enzymes

Think of them as factories for your soil, able to continuously produce the desired nutrient for a number of weeks.

### Enzyme definition

A protein produced by a living organism that acts as a catalyst to bring about a specific biochemical reaction.

### What we do

All of our soil enzyme products perform chemical reactions with the same enzymes that are naturally secreted by plants and/or microbes to do the tasks we want them to do, i.e. convert soil-borne complex molecules into smaller, easier absorbable/digestible molecules.

We just supply them readily, in a higher concentration and more widely distributed throughout the rhizosphere than what microbes and/or the plant root can achieve on their own.

### Priming the soil

Soil enzymes are applied with fertiliser at planting time. Enzymes get to work immediately, quickly and continuously for a number of weeks creating their specific chemical reactions. The enzymes release and make available nutrients in the area near the seed important to growth. The seed germinates into a rich area of nutrients resulting in better seed emergence and establishment.